

5 WE CLAIM

1. A compound having the following formula

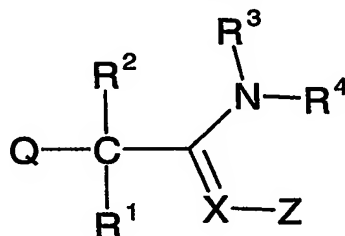


Figure One

wherein

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Q can be any five- or six membered carbocyclic or heterocyclic ring,

X is N, CR, COR, CSO_nR (where n = 0, 1, or 2), CN(R)₂, C(C=O)R, C(C=S)R, C(C=NR)R, CP(=O)_m(R)₂ (where m = 0 or 1), or CP(=S)_m(R)₂ (where m = 0 or 1),

15

wherein each R independently can be

- (a) a C₁₋₁₀, branched or unbranched, alkyl, alkoxy, alkenyl, alkynyl, alkylthio, alkylsulfinyl, alkylsulfonyl, alkylcarbonyl, alkylcarbonothioyl, alkoxycarbonyl, alkylthiocarbonyl, alkoxycarbonothioyl, alkylthiocarbonothioyl, or HC(=NH)-,
- (b) a C₃₋₁₀, cycloalkyl, or cycloalkenyl,
- (c) an aryl, heterocyclyl, aryloxy, heterocyclyloxy, arylthio, heterocyclylthio, arylamino, or heterocyclylamino, or
- (d) a hydro, hydroxy, mercapto, amino, cyano, formyl, nitro, halo, or aminocarbonyl,

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25

Z is CN or NO₂,

R¹ and R² each independently can be

- 5 (a) a C₁₋₁₀, branched or unbranched, alkyl, alkoxy, alkenyl, alkynyl, alkylthio, alkylsulfinyl, alkylsulfonyl, alkylcarbonyl, alkylcarbonothioyl, alkoxycarbonyl, alkylthiocarbonyl, alkoxycarbonothioyl, alkylthiocarbonothioyl, or HC(=NH)-,
- (b) a C₃₋₁₀, cycloalkyl, or cycloalkenyl,
- 10 (c) an aryl, heterocyclyl, aryloxy, heterocyclyloxy, arylthio, heterocyclylthio, arylamino, or heterocyclylamino, or
- (d) a hydro, hydroxy, mercapto, amino, cyano, formyl, nitro, halo, or aminocarbonyl,
- 15 R¹ and R² can optionally be linked together with either a bond or a chain of 1-4 atoms, where such atoms can be carbon, nitrogen, sulfur, phosphorus and oxygen,
- R³ and R⁴ each independently can be,
- 20 (a) a C₁₋₁₀, branched or unbranched, alkyl, alkoxy, alkenyl, alkynyl, alkylthio, alkylsulfinyl, alkylsulfonyl, alkylcarbonyl, alkylcarbonothioyl, alkoxycarbonyl, alkylthiocarbonyl, alkoxycarbonothioyl, alkylthiocarbonothioyl, or HC(=NH)-,
- (b) a C₃₋₁₀, cycloalkyl, or cycloalkenyl,
- 25 (c) an aryl, heterocyclyl, aryloxy, heterocyclyloxy, arylthio, heterocyclylthio, arylamino, or heterocyclylamino, or
- (d) a hydro, hydroxy, mercapto, amino, cyano, formyl, nitro, halo, or aminocarbonyl,
- 30 R² and R³ can optionally be linked together with a chain of 1-4 atoms, where such atoms can be carbon, nitrogen, sulfur, phosphorus and oxygen,

- 5 R^3 and R^4 can optionally be linked together with a chain of 1-4 atoms, where such atoms can be carbon, nitrogen, sulfur, phosphorus and oxygen,

Each member of Q, X, R, R^1 , R^2 , R^3 , and R^4 , which may have a hydrogen
10 atom in a certain position, may instead of having such hydrogen atom, have a,

- (a) a C_{1-10} , branched or unbranched, alkyl, alkoxy, alkenyl, alkynyl, alkylthio, alkylsulfinyl, alkylsulfonyl, alkylcarbonyl, alkylcarbonothioyl, alkoxycarbonyl, alkylthiocarbonyl,
15 alkoxycarbonothioyl, alkylthiocarbonothioyl, $HC(=NH)-$, dialkylphosphonyl, or dialkylphosphatyl,
(b) a C_{3-10} , cycloalkyl, or cycloalkenyl,
(c) an aryl, heterocyclyl, aryloxy, heterocyclyloxy, arylthio, heterocyclylthio, arylamino, or heterocyclylamino, or
20 (d) a hydro, hydroxy, mercapto, amino, cyano, formyl, nitro, halo, or aminocarbonyl,

in such position.

2. A composition comprising a compound according to claim 1 and at
25 least one other active compound where such active compound is at least insecticidally, acaricidally, or nematocidally active.

3. A process of applying a compound according to claim 1, or a composition according to claim 2, to a locus in an amount effective to
30 control pests.

- 5 4. A process of applying a compound according to claim 1, or a
composition according to claim 2, to a locus in an amount effective to
control insects or mites.
- 10 5. A process of topically applying a compound according to claim 1, or a
composition according to claim 2, to an animal in an amount effective
to control fleas.
- 15 6. A process of orally administering a compound according to claim 1, or
a composition according to claim 2, to an animal in an amount
effective to control fleas.